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## PH01-02

### 0 - 7.70m **OVERBURDEN**

7.70-14.52m **DIABASE DYKE** - Fine-medium grained, grey with 2% feldspar por; subophitic texture; homogeneous texture; fractures throughout (parallel to CA to 80CA); often py along fracture planes

14.52-25.52m **PELITE** - Very fine-grained, dark grey with py and po along crenulations and thin laminations, some interbeds of coarser grained more qtz rich layers; other layers are cordierite-rich; throughout aa layers is overall 3-5% po; , py dominantly along fracture planes; crenulations and foliation are about parallel to CA to 50CA; 14.90m 40CA; 15.55m 0CA, 16.60m 20CA, 19.10m 30CA, 25.25m 30CA; fracture planes 20-50CA and variable; Qtz rich vein at 24.80-25.00m ; core is fractured and there is some core loss

25.52-54.75m **DIABASE DYKE** - Fine-grained, dark grey with few fsp por, minor py along fracture planes; minor thin qtz veins throughout; 34.82-36.69m altered fractured core; still diabase but very light grey and with more qtz veins (1-5mm wide and ~30-90CA); 36.00m minor conductive light grey mineral (possibly graphite) along qtz vein (30CA) and diss within

At 38.09m Gradual grain size increases to medium-grained and at 39.80m the diabase has subophitic texture; still grey and homogeneous texture with only a few fsp por; grain size decreases again @ 43.00 and at ~46.00 becomes very fine-grained (chill margin)

46.82-47.48m irregular blebs of po and py with qtz veins/clots, chlorite alteration along contacts of qtz and diabase; py is dominantly diss; 46.82m Qtz vein 40CA fractured 6 cm wide; qtz vein 47.82m 60CA 1-6 cm wide; between these qtz veins are wispy and very fine-grained diss po, py and trace cpy within diabase; overall sulfides ~7%

48.07-48.50m Same as above: 6 cm wide qtz vein at 48.07m (50CA) and with po and py wrapped around diabase clasts and qtz grains; overall sulfides 15%, 2mm wide po bands (50CA) at 48.17m; diabase is more fractured just before and after the qtz and sulfide intersections and more fractured from 48.50 (~10-70CA fracture planes), chlorite alteration with/without pyrite

50.30-50.42m po-py thin foliations with qtz (1mm wide, 30CA), ~5% sulfides, py along fracture 60CA; lower contact is sharp 10CA truncating crenulations of pelite below

54.75 - 223.00m **PELITE** - fine-grained, dark grey with thin laminations and crenulations of po (minor py); lam @ 30-90CA; coarse-grained qtz veins/interbeds/rounded clasts within with chlorite alteration and po-py within and along contacts of qtz

58.20-59.45m Qtz rich zones with po along fractures with qtz; qtz appears "digested" or brecciated (but rounded) sulfides also wrapping around and rimming rounded "clasts" of pelite (eg between 57.10-58.00m with 2-5% sulfides)

59.45-60.47m Intense fracturing and alteration with chlorite and minor po and py (band of light grey pelite with py along fractures; 70CA band)

60.47m continuation of pelite but light grey and less laminated, more massive and siliceous with overall <1% sulfides

60.54m Thin 0.5cm wide py vein, irregular

60.80m 1 cm wide alteration vein 20CA, dark grey green with minor py

60.83m thin 0.3cm wide py and calcite vein (50CA)  
 61.13m py and calcite rich vein, fractured ~90CA  
 61.25-62.25m po thinly laminated ~30-40CA  
 62.25m fractured core  
 Alteration grey-green (50CA) 6 cm wide band, diss and discontinuous laminations of po and py throughout (2-3% sulfides), very magnetic  
 63.00m Alteration vein (20 cm wide, 70CA) <1% sulfides parallel to contact  
 63.20m 16 cm wide qtz and calcite rich vein (70CA) with pelite breccia  
 Continuation of alteration patches throughout with localized intersections of discontinuous thin laminations (1mm wide) of po (30CA @ 64.55m); fractured throughout with/without py and chlorite  
 65.70m Foliation 30CA in altered pelite  
 68.70m Fine-grained pelite continued but increasing po rich laminations (60CA); from 68.70068.72 10-15% patch of fine-grained biotite  
 69.52m Very fine-grained discontinuous po laminations (60CA)  
 70.64-71.40m Very fine-grained brown mica (biotite or phlog) interlayered with silica (40CA), magnetic  
 71.65-71.95m Qtz-rich veins with alteration and pyrite (40CA)  
 72.38m Polished section  
 71.95-72.85m Pelite with thin po laminations (0-30CA), overall po ~20%; few qtz eyes/clasts  
 72.85-73.30m Altered zone with qtz and calcite; top contact ~80CA, lower contact ~10CA, py, po, trace cpy, grey mineral (possibly graphite)  
 73.30-75.22m Pelite, not altered, with thin wispy laminations of po (~15%), 3cm wide discontinuous qtz vein @ 74.00m (0-10CA) with po wrapped around it  
 74.98-75.80m Pelite with po laminations and qtz veins  
 74.94m 1cm wide qtz vein 60CA and with po  
 75.22-22 cm wide zone of qtz veins (40CA), po in fractures in qtz veins  
 75.77m - 3cm wide qtz veins 50CA  
 75.80-79.18m Pelite with intersections of fine-grained biotite and siliceous pelite with minor to trace sulfides throughout; biotite, po-poor zones increase with depth, po along fracture planes (10-15CA)  
 79.18-82.30m **ALTERATION -FAULT ZONE** : silica rich pelite with variable wispy and diss po, fractured  
 81.00-82.30m Ground core (**FAULT GOUGE**): pelite is crosscut and brecciated by several irregular veins of qtz and calcite with po  
 82.60-85.57m Pelite, fine-grained, dark grey with overall 10% diss and laminated po (40CA 84.66m); minor discontinuous qtz veins throughout (eg 84.85m 0.5cm wide 40CA), trace cpy @ 82.65m  
 85.57m Increasing qtz and siliceous zones with depth, 0.5cm wide 87.10m 50CA and 87.20m (70CA); more po and py  
 87.28-92.60m Fracture zone - Pelite, intense fracturing and broken core (core loss); py along laminations and fracture planes, po in less altered core; qtz and calcite veins throughout; 88.05m py laminations 60CA; 88.63m qtz/calcite vein 60CA, overall sulfides ~5-7%  
 92.60m Siliceous (qtz rich) medium-grained psammite with few fsp por within, tan colored with

interbeds of fine-grained pelite starting around 95.40m; qtz veins and siliceous zones throughout; overall sulfides (po and py) ~1-2% confined mainly to qtz rich areas

92.85m Qtz rich band 40CA, 5cm wide light grey

93.83m 6cm wide 60CA qtz rich band with large round qtz clasts or eyes, with po, rounded fsp por

Foliation: 96.45m 40CA but variable throughout and crenulated with thin qtz bands

Qtz veins: 96.90m 1cm wide (but variable) 60CA, po in fractures and along contact

97.05m 1cm wide 60CA

Increasingly fine-grained dark grey pelite within crenulations of qtz (coarse-grained qtz grains), po and lesser py ranges from <1 to 3%

Qtz vein : 99.66m 0.5-4 cm wide 80CA

98.67m 1-2cm wide ~90CA

105.94-106.23m irregular vein/zone

109.27m 3cm wide with brecciated pelite and minor po, 60CA

110.18m ~1cm wide 60CA

99.20m ~2-3mm wide crosscutting foliation (40CA), po rich vein (~15CA)

From ~108.00 to 110.87m thin <0.5 cm wide qtz filled fractures, some with po blebs and with pelite breccia

~102.40m ~15cm wide zone of cordierite and throughout; minor light pink, rounded garnet

From 111.13 to 114.42m core is fractured with irregular qtz veins, bands and blebs with minor garnet; sulfides (po, py) overall, 1%

Continuation of qtz-rich pelite

117.00~133.00m Thinly laminated/crenulated and wispy po and py with po and py veins in fine-grained dark grey pelite with minor localized qtz veins/clasts, no cpy observed; Crenulated py 50CA @ 119.30m

114.59m Qtz vein 70CA 0.5 cm wide

121.50m 5 cm wide coarse-grained leucocratic qtz rich meta sedimentary layer with minor sulfides (50CA)

121.10m 0.5 cm wide po rich band/layer 60CA, overall sulfides po and py between 5-15%

123.95m Crenulated po 60CA

125.75m thin po rich veins/laminations @ 50CA

128.00-132.00 Fractured core which increases from 131.00 to 131.45m to very fractured (core loss); fractures (10-60CA variable) with/without qtz veins

132.10m qtz/calcite vein with py, 20CA

132.80m ~5cm wide max coarse-grained qtz vein with po (30CA)

133.00 to 135.32m gradual decrease of sulfides, more coarse-grained with more qtz / siliceous and qtz veins/zones, lighter grey (meta sedimentary rock); overall sulfides max 3% (locally)

134.00m 0.5cm wide qtz vein 30CA

135.32m Back into very fine-grained pelite with po laminations/crenulations (up to 20% locally)

138.88m 70CA 3cm wide coarse-grained qtz vein with po in fractures and along contacts, trace cpy

139.05m 70CA 3cm wide qtz vein, obscure with some po within

148.53m 2cm wide qtz vein (60CA), minor sulfides

Garnet in pelite (137.64m to 140.38m, local patches

140.65-141.05m Intense fractures 10CA

Crenulation/foliation of po: 141.40m 60CA

145.90m 60CA

146.20-147.72m gradual increase in grain size to fine-medium-grained, more qtz/siliceous zones, less po, lighter grey (meta sedimentary rock) and very fine-grained py, po, light grey possibly graphite, up to 10% diss po, py

147.72m back into fine-grained pelite with po laminations

Po rich band @ 150.30m ~1cm wide ~90CA

Foliation/crenulation of po: 157.20m 60CA, 151.42m 40CA, 151.90m 15CA, 156.35m 10CA, 152.90m 30CA

159.16m Increase of siliceous and rounded qtz "clasts" interbedded with pelite, po rich layers, foliation in qtz rich areas are more variable and there are less amounts of po, py, po and py finely diss (hard to see on outer surface of core), fracture filled with calcite crystals at 155.95m (10CA)

123.50m Polished thin section

~160.55m Continuation of pelite with po crenulation/lamination and blebs throughout; continuing downhole are a few calcite and qtz rich veins (~<0.5cm wide)

Qtz with/without calcite veins: 161.85 5CA, 164.20-164.60m 35-40CA, 164.85m 40CA, 165.60m 60CA 1mm wide

Few minor siliceous/qtz and biotite rich zones throughout

171.52-171.87m 60CA contact between dark grey purple coarse-grained pelite or felsic volcanic and pelite; 50CA contact; felsic volcanic or coarser grained pelite has ~1% or less diss sulfides

Continued pelite with diss bleb and discontinuous laminations/crenulations throughout (sulfide % range from <1 to 20% locally, !2-3% average); interbeds of siliceous qtz-rich, po-poor layers throughout; few minor crenulated qtz veins/layers (185.55m 70CA, ~1cm wide with po; 185.84m ~90CA with sulfides ~0.5cm wide)

~175.00-177.85m Coarse grained qtz and possibly garnet, alteration in pelite

186.30m 10 cm wide siliceous zone 40CA with thin po laminations parallel to contacts

187.00 to EOH Continuation of pelite with minor qtz veins and coarser grained pelite interbeds (but still fine grained); cordierite (<0.5 cm) throughout; po.py; overall sulfides 1-5%, locally variable; thin "micro" crenulations within pelite

Qtz vein: 183.13m 60CA 1 cm wide with minor sulfides

189.33m 70CA <0.5 - 1 cm wide with pelite breccia

197.40m 90CA 1 cm wide

198.30m Fracture 25CA, calcite filled with minor po, py; 198.10m 20CA

Po along foliations : 190.26m 40CA

191.75m 50CA 1 cm wide with sulfide laminations (po) crosscutting veins about parallel to CA

199.15m 30CA

193.20m 50CA also parallel to CA

200.53m 1-2mm wide calcite-qtz rich veins @ 20-30CA (a few more throughout 20-50CA)

206.70m Polished section: very thin discontinuous po laminations in pelite

Qtz rich veins 206.05m ~1-1.5cm wide 40CA

204.65m ~1-1.5cm wide 40CA, discontinuous

214.68m 4 cm wide qtz vein @ 50CA, fractures with calcite @ 20CA

215.35m 45cm of qtz-calcite rich veins, fractured core 30-60CA

223.00m EOH